

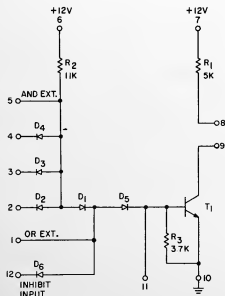
Functional Description

The AOI-2C module consists of a three diode positive AND circuit, followed by a diode OR and a saturating transistor inverter.

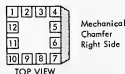
Pins 2, 3 and 4 are the AND inputs. Pin 5 can be used to extend the AND function. The OR function can be accomplished by:

1. OR extending Pin 1 using on AOX-1C, AOX-2C modules
2. dotting collectors (parallel connected collectors) with other modules - only one collector resistor is required.

Schematic

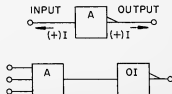


Terminal Configuration



PIN 11 LEAVE OPEN

Block Diagram



Maximum Ratings

Input Voltage = 13V

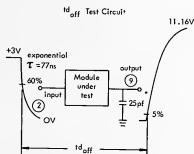
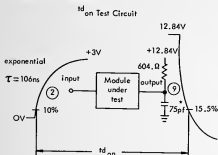
Output Voltage = 13V

$I_E = 15$ Milliamps

ADI-2C Module Functional Tests

TESTS	TERMINAL CONDITIONS												°C	ADDITIONAL LOAD REQUIREMENTS	VARIABLE	LIMITS		UNITS
	1	2	3	4	5	6	7	8	9	10	11	12				MIN	MAX	
DC ON	-	1.90V	1.90V	1.90V	-	11.16V	12.84V	V_O	V_O	GND	-	-	25	10.3mA CURRENT INTO TERMINAL 9	V_O	2.8	9.29	V
DC NOISE	-	0.95V	12.84V	12.84V	-	12.84V	11.16V	V_O	V_O	GND	-	-	25		V_O	2.8		V
DC NOISE	-	12.84V	0.95V	12.84V	-	12.84V	11.16V	V_O	V_O	GND	-	-	25		V_O	2.8		V
DC NOISE	-	12.84V	12.84V	0.95V	-	12.84V	11.16V	V_O	V_O	GND	-	-	25		V_O	2.8		V
DC OFF	-	12.84V	12.84V	12.84V	-	12.84V	11.16V	V_O	V_O	GND	-	GND	25		V_O	11.16		V
DC NOISE	-	-	-	1.40V	-	11.16V	V_O	V_O	GND	-	-	-	75		V_O	2.8		V
M_{on}	-	INPUT	-	-	-	11.16V	12.84V	V_O	V_O	GND	-	-	25	SEE M_{on} TEST	M_{on}	80	412	m
M_{off}	-	INPUT	-	-	-	12.84V	11.16V	V_O	V_O	GND	-	-	25	2.1K BETWEEN PINS 10 & 6 SEE M_{off} TEST	M_{off}	160	412	m

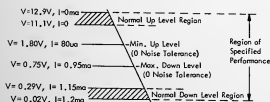
Test Waveforms



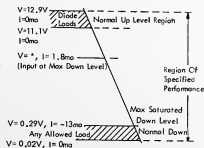
NOTE: 1.1K Ω external resistor to simulate full load condition

* Including probe capacitance

Input Requirements



Output Specifications

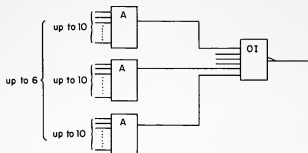


*Defined by collector load impedance.

Fan In

AND = Total of 10 inputs

OR = Total of 6 way OR's



Fan Out

Total collector current for the AOI-2C is 13ma

$$13\text{ma} \geq I_{RC} + N_1 K_1 + N_2 K_2 + \dots$$

I_{RC} = Total collector load resistor current

N_1 = Number of AOI-2C loads

N_2 = Number of AOI-1C loads

K_1 = 1.15ma - AOI-2C loading constant

K_2 = 2.3ma - AOI-1C loading constant

To double the Fan Out, the output collectors and inputs must be paralleled.

Maximum Power Supply Current Requirements

+12V	$\frac{\text{ON}}{3.8\text{ma}}$	$\frac{\text{OFF}}{1.2\text{ma}}$
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Maximum Power Dissipation

$\frac{\text{ON}}{55\text{mw}}$	$\frac{\text{OFF}}{15\text{mw}}$
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$$\text{Average Normal Power Dissipation} = \frac{\text{NOMINAL ON} + \text{NOMINAL OFF}}{2} = 26.0\text{mw}$$

General Wiring Rules (For Printed Circuit Wire - 10 Mil Width Lines)

Total net length for AND extensions must not exceed 18 inches. OR extensions must be less than 6 inches. Total net length at either input or output should be less than 60 inches unless longer delays can be tolerated.